User Guide

Interfaces

DVI-RGB 200

DVI to Analog RGB Video Interface

Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

68-1791-01 Rev. A
10 10

Safety Instructions • English

⚠ **This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.**

⚡ **This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.**

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Consignes de Sécurité • Français

⚠ **Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).**

⚡ **Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.**

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Avertissement

Alimentations • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'Il y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Sicherheitsanleitungen • Deutsch

⚠ **Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.**

⚡ **Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.**

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Instrucciones de seguridad • Español

⚠ **Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.**

⚡ **Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.**

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

安全须知 • 中文

⚠ 这个符号提示用户该设备用户手册中有重要的操作和维护说明。

⚡ 这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过 。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。必须使用与厂家推荐的相同或相近型号的电池。按照生产厂的建议处理废弃电池。

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The Class A limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance with FCC emissions limits.

For more information on safety guidelines, regulatory compliances, EMI/EMF compliance, accessibility, and related topics, **click here**.

Notational Conventions Used in this Guide

TIP: A tip provides a suggestion to make setting up or working with the device easier.

NOTE: A note draws attention to important information.

CAUTION: A caution warns of things or actions that might damage the equipment.

WARNING: A warning warns of things or actions that might cause injury, death, or other severe consequences.

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Trademarks

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Contents

Introduction 1

Installation and Operation..................... 2

- Installation Overview....................................... 2
- Mounting the Interface................................... 2
- Rear Panel Connections and Controls............... 3
  - DVI Connector Pin Assignments.................. 4
- Front Panel Controls and Indicator 5
- Operation 6
  - Capturing a User-recorded EDID.................. 6

Reference Information 7

- Specifications.. 7
- Part Numbers.. 9
  - DMS Matrix Player Part Numbers................. 9
  - Mounting Accessories 9
  - Accessories 9
- Mounting the Interface................................. 10
  - Tabletop Use 10
  - Rack Shelf Mounting................................. 10
  - Furniture Mounting.................................. 12

Introduction

The Extron DVI-RGB 200 DVI to analog RGB video interface converts DVI digital video to analog RGB video. The interface accepts a single link of digital-only Digital Visual Interface (DVI-D) video from a computer, or other digital video source device, on a standard 29-pin female DVI-I connector. The interface outputs analog RGBHV, RGBS, or RGsB video on female BNC connectors. The interface also buffers the DVI input and loops it through on a DVI connector for use by a local monitor (see figure 1).

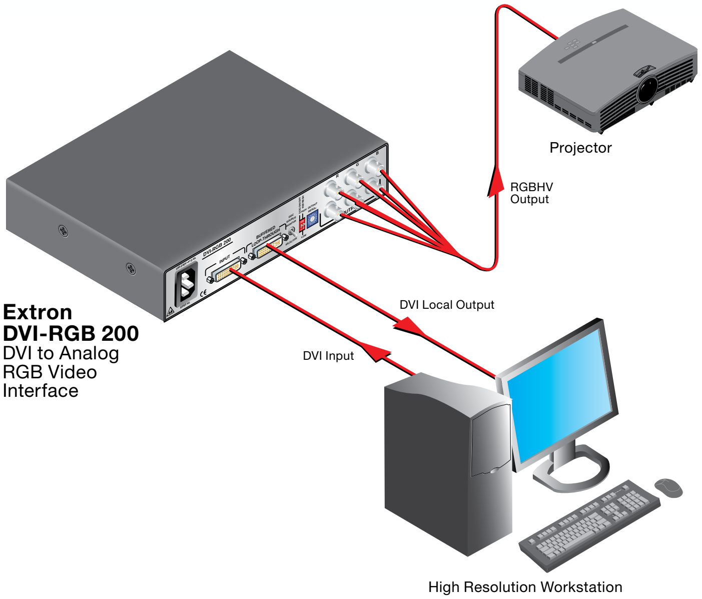

Projector
RGBHV Output
Extron
DVI-RGB 200
DVI to Analog
RGB Video
Interface
DVI Local Output
DVI Input
High Resolution Workstation

Figure 1. **Typical DVI-RGB 200 Application**

The video source uses the bidirectional Display Data Channel (DDC) to determine the video resolution and refresh rate. The video source can obtain the rate directly from the local monitor or the user can select among 28 resolutions and refresh rates built into the interface.

Level and peaking adjustments allow the user to enhance the RGB video output for transmission across long distances.

The DVI-RGB 200 is rack mountable and has an internal switching power supply for worldwide power compatibility.

Installation and Operation

This sections details the installation and operation of the DVI-RGB 200, including:

- **Installation Overview**
- **Mounting the Interface**
- **Rear Panel Connections and Control**
- **Front Panel Controls and Indicator**
- **Operation**

Installation Overview

Follow these steps to install and set up an Extron DVI-RGB 200 for operation:

1. Turn off all of the equipment. Ensure that the video sources and the output display are all turned off and disconnected from the power source.
2. Mount the interface. See **Mounting the Interface**.
3. Connect the cables. See **Rear Panel Connections and Controls**.
4. Plug in the power supply, then turn on the display devices and the input devices.
5. Set the level and peaking. See **Front Panel Controls and Indicator**.

Mounting the Interface

CAUTION: Installation and service must be performed by authorized personnel only.

Detailed mounting instructions can be found in the **Reference Information** section. The 1U high, half-rack width interface DVI-RGB 200 can be placed on a tabletop, **mounted on a rack shelf**, or **mounted under a desk or tabletop**. Use the applicable optional hardware:

- RSU 126 6-inch deep universal rack shelf kit (part #60-190-10)
- RSB 126 6-inch deep basic rack shelf (part #60-604-11)
- RSU 129 9.5-inch deep universal rack shelf kit (part #60-190-01)
- RSB 129 9.5-inch deep basic rack shelf (part #60-604-02)
- MBU 125 Under-desk mount kit (part #70-077-01)
- MBD 129 Through-desk mount kit (part #70-077-02)

Rear Panel Connections and Controls

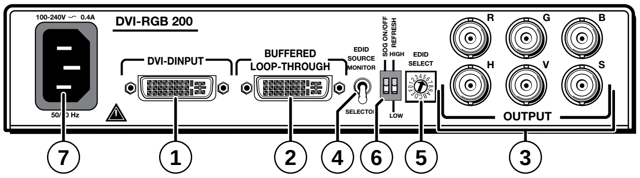


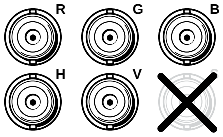
Figure 2. **DVI-RGB 200 Rear Panel**

① **Input connector** — Connect a single link of direct digital video to this 29-pin DVI-I connector (figure 2) using the included cable.

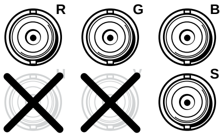
② **Buffered Loop-through connector** — If desired, connect a direct digital local monitor to this 29-pin DVI-I connector.

> **NOTE:** The user can also record EDID from a display on the Buffered Loop-Through connector, store it onto the units internal memory and supply to the source (DVI-D input). See **Capturing a User-recorded EDID**.

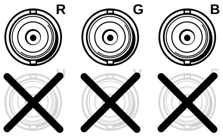
③ **Output connectors** — Connect an RGB display to these female BNC connectors.



For RGBHV video — Connect to five BNC connectors as shown at right. Ensure that the SOG On/Off switch (⑥) is turned off.



For RGBS video — Connect to four BNC connectors as shown at right. Ensure that the SOG On/Off switch (⑥) is turned off.



For RGsB video — Connect to three BNC connectors as shown at right. Ensure that the SOG On/Off switch (⑥) is turned on.

④ **EDID Source switch** — Set this switch to the Monitor (up) position to connect the DDC channel between the direct digital video source and the local monitor.

Set this switch to the Selector (down) position to connect the DDC channel between the direct digital video source and the built-in DVI-RGB 200 EDID logic.

⑤ **EDID Select** — If the EDID Source switch (④) is in the Selector position, set this switch to the appropriate position to select the desired video resolution. Use the Refresh DIP switch (⑥) to select the refresh rate. Table 1 identifies the switch positions and the associated resolutions and vertical refresh rates.

Table 1. **Video resolution**

EDID Select Switch		Refresh DIP Switch	EDID Select Switch		Refresh DIP Switch	EDID Select Switch		Refresh DIP Switch
Pos.	Resolution	▼ Dwn ▲ Up	Pos.	Resolution	▼ Dwn ▲ Up	Pos.	Resolution	▼ Dwn ▲ Up
0	User EDID	See page 6	6	1280x1024	50 Hz 60	C	1680x1050	50 Hz 60
1	800x600	50 Hz 60	7	1360x768	50 Hz 60	D	1920x1080	50 Hz 60
2	1024x768	50 Hz 60	8	1366x768	50 Hz 60	E	1920x1200	50 Hz 60
3	1280x720	50 Hz 60	9	1400x1050	50 Hz 60	F	N/A	
4	1280x768	50 Hz 60	A	1440x900	50 Hz 50			
5	1280x800	50 Hz 60	B	1600x1200	50 Hz 60			

> **NOTE:** Many monitors will not support all of the resolutions and refresh rates shown. If you get no display, try a different rate.

⑥ **DIP switches —**

SOG (Sync on Green) On/Off switch — Set this switch to the On (up) position to enable SOG for RGsB video. Set this switch to the Off (down) position to disable SOG for RGBS or RGBHV video.

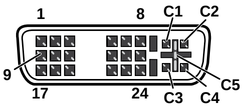
Refresh switch — If the EDID Source switch (④) is in the Selector position and the EDID select switch (⑤) is in position 1 through F position, set this switch either up or down to select the refresh rate of the selected output (see **table 1**).

If the EDID Source switch (④) is in the Selector position and the EDID select switch is in position 0, set this switch up to capture the EDID data from the monitor connected to the Buffered Loop-through connector (②) (see **Capturing a User-recorded EDID**).

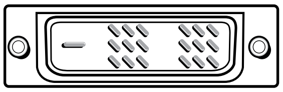
⑦ **AC power connector —** Plug a standard IEC power cord into this connector to connect the interface to a 100 to 240 VAC, 50 Hz or 60 Hz power source.

DVI Connector Pin Assignments

Figure 3 defines the DVI pin assignments.



Female Connector



Male Connector

Pin	Signal	Pin	Signal	Pin	Signal
1	TMDS data 2–	9	TMDS data 1–	17	TMDS data 0–
2	TMDS data 2+	10	TMDS data 1+	18	TMDS data 0+
3	TMDS data 2 shield	11	TMDS data 1shield	19	TMDS data 0 shield
4	Spare	12	Spare	20	Spare
5	Spare	13	Spare	21	Spare
6	DDC clock	14	+5 V power	22	
7	DDC data	15	Ground (+5 V)	23	TMDS clock+
8	No connection	16	Hot Plug Detect	24	TMDS clock–
C1	Analog Red Video	C3	Analog Blue Video	C5	Analog Ground
C2	Analog Green Video	C4	Analog H. Sync		

Figure 3. **DVI Connectors**

DVI signals run at a very high frequency and are especially prone to bad video connections, too many adapters, or excessive cable length. To avoid the loss of an image or jitter, follow these guidelines:

- Do not exceed 16.4 feet (5 meters) on the input or buffered loop-through of the interface.
- Limit or avoid the use of adapters.
- Use only approved DVI connectors.

NOTES:
- Use only cables specifically intended for DVI interfaces. Use of non-DVI cables or modified cables can cause the DVI-RGB 200 to not operate correctly.
- The missing connectors on the included DVI cable (TMDS data 3, 4, and 5) are not required for the single link of DVI-D data supported by the DVI-RGB 200. These pins are grayed out in figure 3.

Front Panel Controls and Indicator

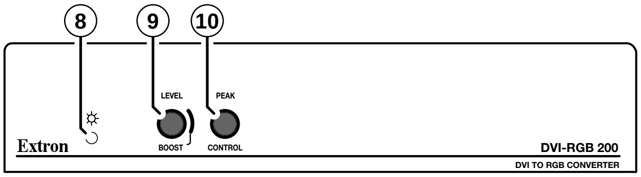


Figure 4. **DVI-RGB 200 Front Panel**

⑧ **Power LED** — The two-tone Power LED lights amber or green:

- **Amber** when the DVI-RGB 200 is receiving power but no DVI input signal is applied.
- **Green** when the DVI-RGB 200 is receiving power and a DVI input is present.

⑨ **Level Boost control** — The Level Boost control alters the brightness of the picture on the RGB output. Judge the adjustment visually by looking at the display.

- At the minimum level setting (the counterclockwise limit of this control), the interface outputs video at 0.7 Vp-p.
- At the maximum level setting (the clockwise limit of this control), the interface outputs video at 1.45 Vp-p.

Select a level setting of 0.7 V and above to compensate for the signal level decrease that occurs with long cables. Set the level at the maximum setting for cable lengths over 500 feet.

NOTE: Level Boost has no effect on the DVI output of the Buffered Loop-through connector.

⑩ **Peak control** — The Peak (peaking) control affects the sharpness of the picture on the RGB output. Increased peaking can compensate for detail (mid- and high-frequency) loss from low bandwidth system components or capacitance in long cables. The minimum setting (at the counterclockwise limit) provides no peaking. The maximum setting (at the clockwise limit) provides 100 percent peaking. Adjust this control while viewing the displayed image to obtain the optimum picture sharpness.

NOTE: Peaking has no effect on the DVI output of the Buffered Loop-through connector.

Operation

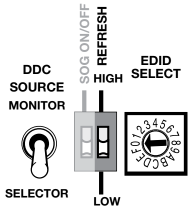
After the DVI-RGB 200 and its connected devices are powered up, the system is fully operational. If you encounter any problems, verify that the cables are routed and connected properly.

NOTES:
- High-bandwidth Digital Content Protection (HDCP) is an encryption method that protects copyrighted digital entertainment material that uses DVI video. The DVI-RGB 200 cannot respond to the HDCP decryption key.
  When the DVI input is HDCP encrypted, the RGB output of the DVI-RGB 200 is blank.
- The computer reads the DDC on power up to determine the direct digital video resolution and refresh rate to output. Ensure that the local DVI monitor and the RGBHV monitor can both display the selected resolution and refresh rate, otherwise images may be distorted or missing.
- Ensure that the computer and local monitor are connected to the DVI-RGB 200, and the DVI-RGB 200 and local monitor have power applied, before applying power to the computer. If the other devices are not turned on before the computer is, the image will not appear.

Capturing a User-recorded EDID

Record the EDID from a display connected on the Buffered Loop-through connector as follows:

1. Set the rear panel EDID Source switch to the Selector position.
2. Set the EDID Select switch to the 0 position.
3. Change the Refresh dip switch to on (up).



NOTE: The front panel Power LED lights amber whether the DVI-D Input connector is receiving a signal or not.

4. Connect the **unpowered** display device to Buffered Loop-through connector.
5. Power on the display device. The DVI-RGB 200 copies the EDID of the display connected in step **4** to its memory.

   After the EDID is successfully copied, the front panel Power LED lights green.

6. Set the Refresh DIP switch to off (down).

NOTE: When Refresh is off, the EEPROM contents are write-protected to avoid accidental overwrites.
When the EDID Select switch is in the 0 position, the stored EDID data is read to the video source connected to the DVI-D Input connector every time the DVI-RGB 200 is powered up.

Reference Information

This section discusses the specifications, part numbers, and accessories for the DVI-RGB 200. Topics that are covered, include:

- **Specifications**
- **Part Numbers**
- **Mounting the Interface**

Specifications

Video

NOTES:
- The DVI-RGB 200 converts a single link DVI signal to an analog RGB signal.
- Using an adaptor (the Extron HDMI to DVI-D adapter, part #26-616-01), the DVI-RGB 200 can accept HDMI signals. It converts HDMI digital RGB signals, but does not support the HDMI digital component (YCrCb) signal format.

Resolution range	Up to 1920x1200 or 1080p @ 60 Hz
Formats	RGB
EDID	Supports emulation of custom or factory preset Extended Display Identification Data (EDID) tables
Standards	DVI 1.0

Video input and loop through

Number/signal type	1 single link DVI-D digital video input 1 single link DVI-D buffered loop-through
Connectors	1 female DVI-I (DVI input) 1 female DVI-I (DVI loop through)

Video output

Number/signal type	1 RGBHV, RGBS, RGsB
Connectors	6 female BNC
Nominal level	0.7 Vp-p for RGB
Level adjustment range	0 dB to 6 dB (x1 to x2)
Peaking adjustment range	0 dB to 6 dB (x1 to x2) at 100 MHz
Impedance	75 ohms
Output resolution	Follows input, determined by the local DVI loop-through monitor or by the selector on this product.
Return loss	-35 dB @ 5 MHz
DC offset	±5 mV maximum with input at 0 offset
Output cable driving distance	150’ (45 m) at 1600 x 1200 with Extron MHR cable 250’ (60 m) at 1024 x 768 with Extron MHR cable

Sync

Output type	RGBHV, RGBS, RGsB
Output level	TTL (5 Vp-p, unterminated)
Output impedance	75 ohms
Polarity	Positive or negative (follows input)

General

Power	100 VAC to 240 VAC, 50-60 Hz, 12 watts, internal
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, vents on sides
Mounting	
Rack mount	Yes, with an optional 1U deep rack shelf
Furniture mount	Yes, with optional under-desk mounting kit or through-desk mounting kit
Enclosure type	Metal
Enclosure dimensions	1.7" H x 8.7" W x 6.0" D (1U high, half rack wide) 4.3 cm H x 22.1 cm W x 15.2 cm D (Depth excludes connectors and knobs.)
Product weight	1.6 lbs (0.7 kg)
Shipping weight	4 lbs (2 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
Compliances	CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTES:
- All nominal levels are at ±10%.
- Specifications are subject to change without notice.

Part Numbers

Interface Part Numbers

These items are included in each order for a DVI-RGB 200:

Interface and included parts	Part number
DVI-RGB 200	60-1064-01
IEC power cord	
Tweeker (small screwdriver)	
DVI-RGB 200 Setup Guide	

Mounting Accessories

Mounting Kit	Part Number
RSU 126 6-inch deep 1U universal rack shelf kit	60-190-10
RSB 126 6-inch deep 1U basic rack shelf	60-604-11
RSU 129 9.5-inch deep 1U universal rack shelf kit	60-190-01
RSB 129 9.5-inch deep 1U basic rack shelf	60-604-02
MBU 125 under-desk mount kit	70-077-01
MBD 129 through-desk mount kit	70-077-02

Accessories

These items can be ordered separately:

Accessory	Part number
DVID SL/6 DVI-D male-to-male, 6' (1.8 m) cable	26-585-02
HDMI M-M/6 HDMI male to male, 6' (1.8 m)	26-613-02
HDMI M-DVI-DM/6 HDMI male to DVI-D male, 6' (1.8 m)	26-614-02
BNC cable	26-383-xx
HDMIF-DVIDM HDMI female to DVI-D male adapter	26-616-01
HDMIM-DVIDF HDMI male to DVI-D female adapter	26-617-01

Mounting the Interface

CAUTION: Installation and service must be performed by authorized personnel only.

The 1U high, half rack width DVI-RGB 200 can be placed on a tabletop, mounted on a rack shelf, or mounted under a desk or tabletop.

Tabletop Use

Affix the four included rubber feet to the bottom of the unit and place it in any convenient location.

Rack Shelf Mounting

For rack mounting, mount the interface using any of the following rack mounting options:

- RSU 126 6-inch deep universal rack shelf kit (part #60-190-10). See **figure 5**.
- RSB 126 6-inch deep basic rack shelf (part #60-604-11)
- RSU 129 9.5-inch deep universal rack shelf kit (part #60-190-01). See **figure 6**.
- RSB 129 9.5-inch deep basic rack shelf (part #60-604-02)

UL Guidelines for Rack Mounting

The following Underwriters Laboratories (UL) guidelines pertain to the installation of a DVI-RGB 200 unit into a rack.

1. **Elevated operating ambient** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature specified by the manufacturer [Tma = +32 to +122 °F (0 to +50 °C)].
2. **Reduced air flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
3. **Mechanical loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
4. **Circuit overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. **Reliable earthing (grounding)** — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (such as the use of power strips).

Rack shelf mounting instructions

The unit can be mounted in the front or the rear of the rack.

1. Remove the feet from the bottom of the unit if installed.
2. Mount the unit on the rack shelf, using two 4-40 x 3/16-inch screws in opposite (diagonal) corners to secure it to the shelf (figure 5).

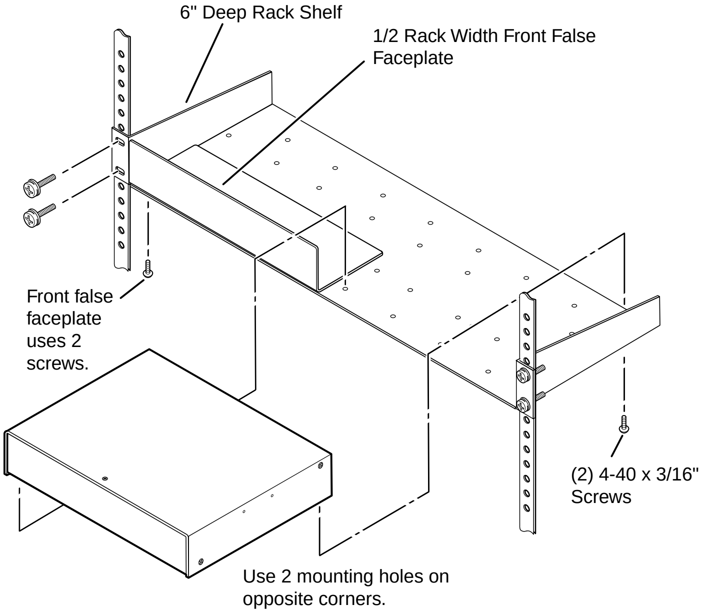

6" Deep Rack Shelf
1/2 Rack Width Front False Faceplate
Front false faceplate uses 2 screws.
(2) 4-40 x 3/16" Screws
Use 2 mounting holes on opposite corners.

Figure 5. **Mounting the Unit on a 3-inch Rack Shelf**

3. Install blank faceplate(s) or other unit(s) on the rack shelf.
4. Attach the rack shelf to the rack using the supplied bolts.

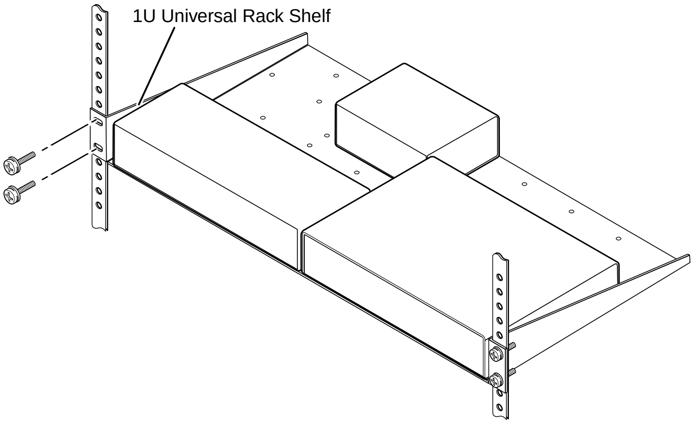

1U Universal Rack Shelf

Figure 6. **Mounting the Unit on a Universal Rack Shelf**

Furniture Mounting

Under-Furniture Mounting

The unit can be mounted under a horizontal surface using an optional MBU 125 under-desk mounting kit (part #70-077-01). Mount the unit under a desk or table as follows:

1. Remove feet from the bottom of the unit if installed.
2. Secure the under-desk mounting brackets to the interface with the four machine screws provided in the mounting kit (figure 7).

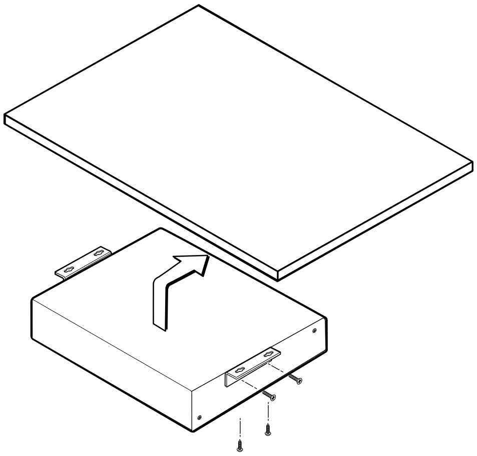


Figure 7. Under-desk Mounting

3. Hold the interface with attached brackets against the underside of the desk or other furniture. Mark the location of holes for screws on the desk.
4. Drill 1/4-inch (6.4 mm) deep, 3/32-inch (2 mm) diameter pilot holes in the table or desk at the marked screw locations from the underside or inside (the concealed side) of the furniture, where the interface will be located.
5. Insert the four wood screws into the pilot holes. Fasten each screw into the installation surface until just less than 1/4 inch of the screw head protrudes.
6. Align the installed screws with the slots in the mounting brackets, and place the interface against the surface, with the screws through the bracket slots.
7. Slide the interface slightly forward or back, then tighten all four screws to fasten it in place.

Through-furniture mounting

The interface can be mounted through a desk or other furniture using an optional Extron MBD 129 through-desk mounting kit (part #70-077-02). Mount the unit through a desk or table as follows (figure 8):

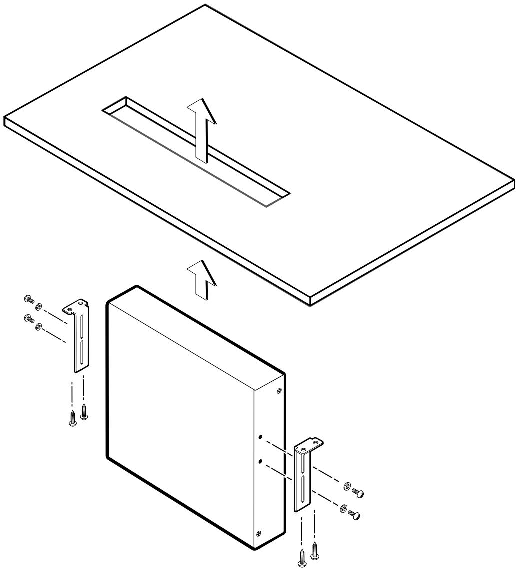


Figure 8. **Through-desk Mounting**

1. Loosely attach the mounting brackets to the interface using the four machine screws and washers supplied with the mounting kit.
2. Hold the interface against the inside of the surface through which it will be mounted. Mark the four screw holes and the table material to be removed on the inside of the surface to which you are mounting the device.
3. Remove the table material. Test the fit by inserting the front of the device through the hole. If necessary, use a rasp or coarse file to enlarge the hole.
4. Drill four pilot holes, each 3/32 inch in diameter by 1/4 inch deep, where you made marks.
5. Using the provided four wood screws, secure the brackets to the mounting surface.
6. Slide the interface up and down in the mounting brackets until the face of the unit is at the desired height. Tighten the screws that secure the brackets in place.

   If the screws are inaccessible to a screwdriver:

   a. Mark the location of the brackets relative to the screws.
   b. Remove the interface from inside the furniture.
   c. Tighten the screws.
   d. Replace the unit inside the surface (step **5**).

Extron® Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1001 East Ball Road
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe, Africa, and the Middle East:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:
Extron Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: (714) 491-1500
Asia: +65.6383.4400
Europe: +31.33.453.4040
Japan: +81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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